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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Brian J. Brown and Michael L. Davis
Application No.:	09/666866
Filed:	September 20, 2000
For:	Improved Longitudinally Flexible Expandable Stent
Examiner:	Paul B. Prebilic
Group Art Unit:	3738

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Docket No.: S63.2N-5605-US04

### TRANSMITTAL LETTER

1. In regard to the above-identified application, in addition to this 2 page transmittal letter, we are submitting the attached: 40 pg Brief on Appeal (in triplicate), 8 pg attachment (in triplicate) and post card.
2. With respect to fees:
  - No additional fee is required.
  - Attached is check(s) in the amount of \$340.00
  - Charge additional fee to our Deposit Account No. 22-0350. A Petition for Extension of Time was filed November 11, 2004. However, if add'l fees are required please charge this deposit account
3. **CONDITIONAL PETITION FOR EXTENSION OF TIME**  
This conditional petition is being filed along with the papers identified in Item 1 above and provides for the possibility that Applicant has inadvertently overlooked the need for a petition and fee for extension of time or for a petition and fee for any other matter petitionable to the Commissioner as required. If any extension of time for the accompanying response is required or if a petition for any other matter is required, by petitioner, Applicant requests that this be considered a petition therefor.
4. Notwithstanding paragraph 2 above, if any additional fees associated with this communication are required and have not otherwise been paid, including any fee associated with the Conditional Petition for Extension of Time, or any request in the accompanying papers for action which requires a fee as a petition to the Commissioner, please charge the additional fees to Deposit Account No. 22-0350.

Please charge any additional fees or credit overpayment associated with this communication to the Deposit Account No. 22-0350.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS

Date: November 23, 2004

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**Certificate Under 37 CFR 1.10:** I hereby certify that this Transmittal Letter and the paper(s) as described herein, are being deposited in the U.S. Postal Service, as EXPRESS MAIL, Label No. EV579604392US, addressed to Mail Stop Appeal Breif – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 23, 2004.

  
Julie Emerson



PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

**In Re Application of:** Brian J. Brown and Michael L. Davis  
**Application No.:** 09/666,866  
**Filed:** September 20, 2001  
**For:** IMPROVED LONGITUDINALLY FLEXIBLE EXPANDABLE STENT  
**Examiner:** Paul B. Prebilic  
**Group Art Unit:** 3738

Docket No.: S63.2-5605-US04

**BRIEF ON APPEAL**

This is a Brief on Appeal for the above-identified application in which pending claims 36-45, 67, 79, 80, 83, 84 and 89-96 were rejected in an Office Action mailed June 15, 2004. In the same Office Action pending claim 57 was allowed. Claims 36-45, 57, 67, 79, 80, 83, 84 and 89-96 are pending in the application.

A Notice of Appeal was filed in this case on August 23, 2004. The fees required under §1.17(c) for filing this brief were addressed in the Notice of Appeal. The Commissioner is authorized to charge Deposit Account No. 22-0350 for any other fees which may be due with this Appeal.

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**(i) Real Party in Interest**

The application is assigned to SciMed Life Systems, Inc., One SciMed Place, Maple Grove, MN 55311-1566, a Minnesota Corporation and a subsidiary of Boston Scientific Corporation, One Boston Scientific Place, Natick, Massachusetts, 01760-1537, a Delaware Corporation.

**(ii) Related Appeals and Interferences**

In prosecution of U.S. Application No. 08/511,076, published May 1, 2003, as U.S. Pub. No. 2003 0083736-A1, an appeal was filed. The instant Application is a continuation of the 08/511,076 Application. A copy of the Board's decision is included herewith.

**(iii) Status of Claims**

Claims 1-35, 46-56, 58-66, 68-78, 81-82, and 85-88 have been canceled. Claims 36-45, 67, 79, 80, 83, 84 and 89-96 are pending in the application and have been rejected and are the subject of this appeal. Claim 84 has been objected to. Claim 57 has been allowed and is not a subject of the instant Appeal.

**(iv) Status of Amendments**

Subsequent to the Final Office Action of September 26, 2003, claims 36, 38, 43, 45, 57, 79-80, and 83 were amended in an Amendment dated March, 15 2004 (the Amendment of March 15, 2004 was filed concurrently with a Request for Continued Examination (RCE).

It is noted that new claims 89-96 which were introduced in the March 15, 2004 Amendment had been previously twice rejected (as claims 46 and 64-69) in the prosecution of co-pending Application No. 08/511,076 from which the present Application claims priority. The instant claims were transferred from the 08/511,076 Application and placed in the present Application in order to streamline prosecution.

No Amendment has been filed subsequent to the Amendment of March 15, 2004.

**(v) Summary of Invention**

A summary of representative claims and a non-limiting listing of locations where support may be found [bracketed citations] is provided as follows:

The invention of **claim 36** is directed to a stent which comprises a plurality of adjacent undulating circumferential bands 16 [page 4, lines 1-3 and 7-9; see also FIGs. 1-4]. Each of the undulating circumferential bands 16 consists of a plurality of interconnected struts 18, wherein each strut has a first end and a second end, and wherein adjacent struts 18 are connected together at only one end (19a and 19b) of the struts [page 4, lines 1-6; see also FIGs. 1-4]. At the first end, each strut 18 is connected only to one adjacent strut 18 and at the second end each strut 18 is connected only to one adjacent strut 18 [Id.]. Each of the undulating circumferential bands 16 has a proximal end region 19 and a distal end region 19, the proximal

end region and the distal end region each has a plurality of end portions where adjacent struts are interconnected [See FIGs. 1-4]. The stent also comprises a plurality of connecting elements 20, wherein each connecting element 20 joins end portions 19 of adjacent undulating circumferential bands 16 [page 4, lines 16-18]. Each connecting element 20 extends from only a single location on each of the adjacent undulating circumferential bands 16, wherein the end portions of the adjacent undulating circumferential bands 16 which are joined to one another are not longitudinally opposite one another [page 4, lines 17-18; see also FIGs. 1-4]. Some of the undulating bands 16 having connecting elements 20 extending from the proximal end region and the distal end region [see FIGs. 1-4].

The invention described in **claim 37** is directed to the invention of claim 36 wherein the interconnected struts 18 have a length, wherein the length of the struts 18 of the undulating circumferential bands at each end of the stent (16a) is different than the length of the struts of the undulating circumferential bands positioned therebetween (16) [page 5, lines 4-9; see also FIG. 4].

The invention described in **claim 38** is directed to the invention of claim 36 wherein the struts 18 of at least one circumferential band 16a are longer than the struts of an adjacent undulating circumferential band 16 [page 5, lines 4-9; see also FIG. 4].

The invention of **claim 39** is directed to the invention of claim 36 wherein the stent is expandable from an unexpanded state to an expanded state and each undulating circumferential band comprises a pattern of interconnected struts, in the unexpanded state at least a portion of the interconnected struts being parallel to one another [page 4, lines 1-3; see also FIG. 1-2 and 4].

The invention described in **claim 40** is directed to the invention of claim 36 wherein the stent is constructed and arranged to be self-expanding [page 5, lines 10-13].

The invention of **claim 41** is directed to the invention of claim 36 that is constructed and arranged to be balloon expandable [page 5, lines 10-13].

The invention described in **claim 42** is directed to the invention of claim 36 wherein the stent is constructed from a shape memory material [page 5, lines 14-15].

The invention of **claim 43** is directed to the invention of claim 36 wherein the end portions of adjacent undulating circumferential bands are not longitudinally opposite one another [page 4, lines 29-33; see also FIG. 3].

The invention of **claim 44** is directed to the invention of claim 36 wherein the interconnected struts having a length, the length of the struts of the undulating circumferential bands at each end of the stent being different than the length of the struts of the undulating circumferential bands positioned therebetween [page 5, lines 4-5; see also FIG. 4].

The invention of **claim 45** is directed to the invention of claim 43 wherein the struts of at least one circumferential band are longer than the struts of an adjacent undulating circumferential band [page 5, lines 4-5, and lines 16-19].

The invention of **claim 67** is directed to a substantially cylindrically shaped stent having a longitudinal axis and which comprises a plurality of closed undulating segments, wherein the undulating segments extend circumferentially about the stent [page 2, line 27 to page 3, line 2]. Each undulating segment has a first end and a second end, the first end is characterized by a plurality of end portions 19 separated by gaps and the second end is characterized by a plurality of end portions 19 separated by gaps, wherein the gaps on the first

end are circumferentially offset from the gaps on the second end and the end portions on the first end are circumferentially offset from the end portions on the second end [page 4, lines 16-18 and lines 29-33; see also FIGs. 1-4]. One of the undulating segments 16 located at a first end of the stent has a plurality of interconnecting elements 20 extending from one end of the segment only to a segment adjacent thereto and one of the undulating segments 16 located at a second end of the stent has a plurality of interconnecting elements extending from one end of the undulating segment only to an undulating segment adjacent thereto [see FIGs. 1-4]. A plurality of intermediate undulating segments 16 are located between the segments at the first and second ends of the stent, and each intermediate undulating segment 16 has interconnecting elements 20 extending from the first and second ends of the intermediate undulating segments 16, wherein the interconnecting elements 20 extend from less than all of the end portions 19 at both ends of the intermediate undulating segments 16 [page 5, lines 1-3; see also FIGs. 1-4]. Each interconnecting element 20 extends from an end portion of an undulating segment 16 to an end portion 19 of an undulating segment 16 adjacent thereto [page 4, lines 16-18]. Each interconnecting element has a proximal end and a distal end, the distal end being offset in both a circumferential direction and a longitudinal direction from the proximal end [page 4, lines 20-22; see also FIGs. 1-4].

The invention of **claim 79** is directed to the invention of claim 84 (see below) wherein each interconnecting element is substantially straight [page 3, lines 12-13; see also FIGs 1-4].

The invention of **claim 80** is directed to the invention of claim 84 wherein the stent further includes end segments and intermediate segments and the end segments of the stent

include longer struts than the intermediate segments of the stent [page 5, lines 4-5; see also FIG. 4].

The invention of **claim 83** is directed to the invention of claim 84 comprising interconnecting elements which are circumferentially adjacent one another and are separated from one another by six struts on each of the cylindrical shaped segments from which they extend [see FIGs. 1-4].

The invention of **claim 84** is directed to a tubular, flexible, expandable stent having a proximal end and a distal end and a sidewall with a plurality of openings therethrough, wherein the stent comprises a plurality of cylindrically shaped segments aligned on a common longitudinal axis to define a generally tubular stent body [page 2, line 27 to page 3, line 2]. Each segment is defined by an undulating pattern of interconnected struts 18 to define the periphery of the stent body and circumferentially adjacent struts 18 are interconnected at only one end (19a or 19b) of the struts [page 4, lines 1-4; see also FIGs. 1-4]. The stent further comprises a plurality of interconnecting elements 20, wherein each interconnecting element extends from an interconnected end of circumferentially adjacent struts 18 on one segment 16 to an interconnected end of circumferentially adjacent struts 18 on an adjacent segment 16 [page 4, lines 16-18; see also FIGs. 1-4]. Each interconnecting element 20 has a proximal end and a distal end, wherein the distal end is circumferentially and longitudinally offset from the proximal end [page 4, lines 16-22; see also FIGs. 1-4]. The stent includes cylindrically shaped segments 16 having at least three struts 18 extending between each interconnecting element 20 extending distally from the cylindrically shaped segment 16 and the nearest interconnecting element 20 extending proximally from the cylindrically shaped segment 16 [page 4, lines 18-20]. Each of

the openings in the sidewall is bounded by two interconnecting elements 20 and portions of two different adjacent cylindrically shaped segments 16 [see FIGs. 1-4].

The invention of **claim 80** is directed to the invention of claim 84 wherein the stent further includes end segments 16a and intermediate segments 16, wherein the end segments of the stent include longer struts 18 than the intermediate segments 16a of the stent [page 5, lines 4-9; see also FIG. 4].

The invention of **claim 89** is directed to a tubular, flexible, expandable stent which comprises a plurality of cylindrical shaped segments aligned on a common longitudinal axis [page 2, line 27 to page 3, line 2]. Each segment 16 has a proximal end and a distal end defined by a member formed in a closed undulating pattern of interconnected struts 18, wherein circumferentially adjacent struts 18 are interconnected at only one end of the struts (19a or 19b) at an interconnected end portion [page 4, lines 1-4, lines 16-18 and see also FIGs. 1-4]. The stent further comprises a plurality of interconnecting elements 20 each extending from one segment 16 to an adjacent segment 16, some of the segments having interconnecting elements extending from the distal end of the segment and from the proximal end of the segment [page 4, lines 16-18]. The interconnecting elements 20 which extend from the distal end of the segment 16 are connected to the interconnecting elements 20 which extend from the proximal end of the segment 16 via three struts 18 of the segment 16 [page 4 lines 18-20; see also FIGs. 1-4]. Each interconnecting element 20 extends from one interconnected end portion of one segment 16 to another interconnected end portion of another adjacent segment 16 but not to an oppositely positioned end portion of an adjacent segment 16 [page 4, lines 20-22, lines 29-33 and see also FIGs. 1-4].

The invention of **claim 90** is directed to a substantially cylindrically shaped stent having a longitudinal axis, wherein the stent comprises a plurality of closed undulating segments 16 which extend circumferentially about the stent [page 2, line 27 to page 3, line 2; see also FIGs. 1-4]. Each undulating segment 16 has a first end and a second end, wherein the first end is characterized by a plurality of end portions 19 separated by gaps and the second end is characterized by a plurality of end portions separated by gaps, wherein the gaps on the first end are circumferentially offset from the gaps on the second end and the end portions on the first end are circumferentially offset from the end portions on the second end [page 4, lines 16-18 and lines 29-33; see also FIGs. 1-4]. The stent further comprises an undulating segment 16 at a first end of the stent having a plurality of interconnecting elements 20 extending from one end of the segment only to a segment adjacent thereto and an undulating segment 16 at a second end of the stent having a plurality of interconnecting elements 20 extending from one end of the undulating segment only to an undulating segment adjacent thereto [see FIGs. 1-4]. A plurality of undulating segments which are located between the segments at the first and second ends of the stent have interconnecting elements that extend from less than all of the end portions 19 at both ends of the segments 16 [page 5, lines 1-3; see also FIGs. 1-4]. Each interconnecting element 20 has a proximal end extending from an end portion of one undulating segment and a distal end extending from an end portion of an undulating segment 16 adjacent to said one undulating segment [page 4, lines 16-18]. Each interconnecting element 20 has a proximal end and a distal end, the distal end circumferentially and longitudinally offset from the proximal end, the interconnecting elements oriented diagonally to the longitudinal axis of the stent [page 3, lines 6-12; page 4, lines 20-25; see also FIGs. 1-4].

The invention of **claim 91** is directed to the invention of claim 90 wherein the stent is constructed of metal [page 5, lines 10-13].

The invention of **claim 92** is directed to the invention of claim 91 wherein the metal is a shape memory alloy [page 5, lines 14-15].

The invention of **claim 93** is directed to the invention of claim 90 wherein the stent forms a thin-walled tubular member [page 3, lines 25-31; page 5, line 14; see also FIGs 2-3].

The invention of **claim 94** is directed to the invention of claim 90 wherein the stent is formed as a self-expanding configuration [page 5, lines 10-13].

The invention of **claim 95** is directed to the invention of claim 90 wherein the stent is formed to have a mechanically expandable configuration [page 5, lines 10-13].

The invention of **claim 96** is directed to the invention of claim 90 wherein the interconnecting elements between adjacent segments are of the same length [page 4, lines 22-23].

**(vi) Issues**

I. Whether the Examiner erred in rejecting claims 36, 39-43, 79, 83, 84, and 89-96 under 35 U.S.C. § 102(b), as being anticipated by U.S. 5,102,417 to Palmaz.

II. Whether the Examiner erred in rejecting claims 36, 39-45, 67, 79, 84, and 89-96 under 35 U.S.C. §103(a) as being obvious over EP 0540290 to Lau et al in view of U.S. 5,102,417 to Palmaz.

III. Whether the Examiner erred in rejecting claims 37, 38 and 80 under 35 U.S.C. §103(a) as being obvious over EP 0540290 to Lau et al and U.S. 5,102,417 to Palmaz, as applied to claims 36, 39-45, 67, 79, 84, and 89-96, and further in view of U.S. 5,725,572 to Lam et al.

**(vii) Argument**

**I. The Examiner erred in rejecting claims 36, 39-43, 79, 83, 84, and 89-96 under 35 U.S.C. § 102(b), as being anticipated by Palmaz.**

Applicants disagree with the assertion set forth by the Examiner that Palmaz anticipates all of the elements of the instant claims.

**Regarding claim 36 and those claims depending therefrom**

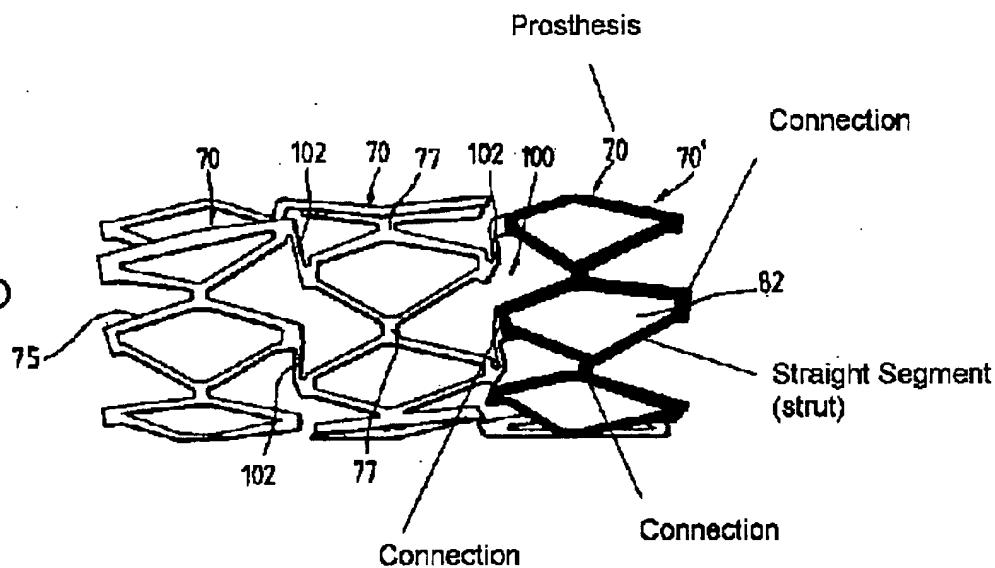
In the Office Action, the Examiner asserts that the instant claims are anticipated by Palmaz and points specifically to figures 9 and 10 of the Palmaz reference to support this assertion. However, it must be noted that the explanation provided in the Office Action to support the rejection is unclear. In the Office action it is stated that:

Palmaz anticipates the claim language where the undulating bands as claimed are the straight segments of prosthesis (70) of Palmaz (see Figures 9 and 10). These straight segments are attached at both ends to another strut either the location of element (77) or at the other ends of the strut. The connecting elements as claimed are met by the spiral connector members (102) of Palmaz (see column 12, line 33 to column 13, line 22).

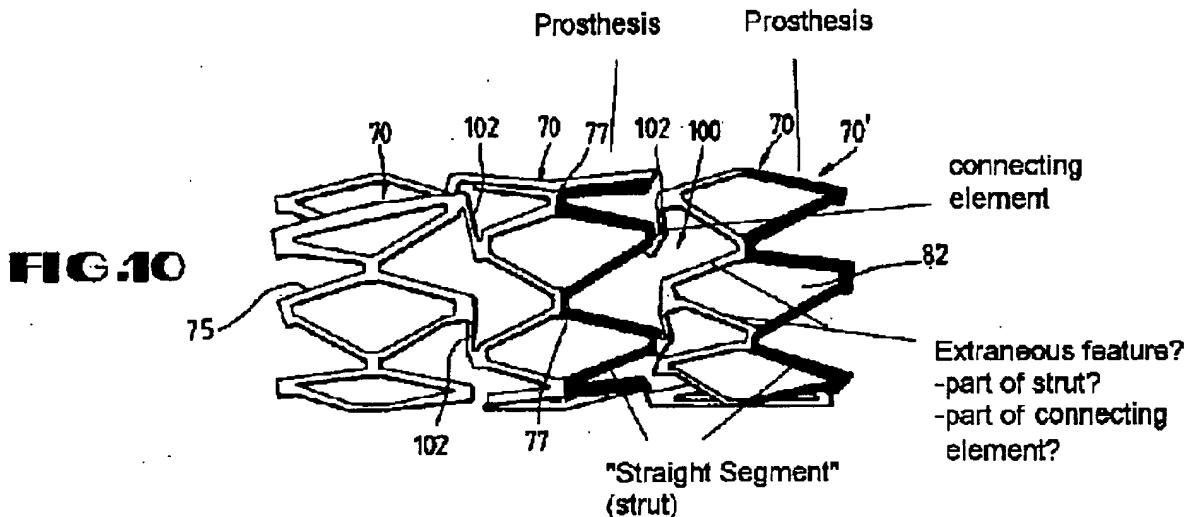
From only this brief statement it is unclear what precisely the Examiner is referring to as the “prosthesis (70)”, or the “straight segments”. In Palmaz, a prosthesis 70, such

as is shown in FIG. 1a and 1b, is a portion of the tubular member of which multiple prostheses 70 may be connected to form prosthesis 70' such as shown in FIGs. 9 and 10 (see Palmaz column 6, lines 20-22; and column 12, lines 64 to column 13, line 11). If such a prosthesis 70 is indeed what the Examiner is referring to, it is clear that such a region avoids the requirement of instant claim 36 that the struts be joined only at one end. As seen below in the annotated copy of FIG. 10 of Palmaz the struts or "straight regions" of a given prosthesis are joined at *both ends* as admitted by the Examiner.

**FIG.10**



In an alternative interpretation of the rejection, it is possible to construe the Examiner's comments as referring to, in effect, a 'half' of each prosthesis 70, such as is illustrated in another annotated version of FIG. 10 presented below.



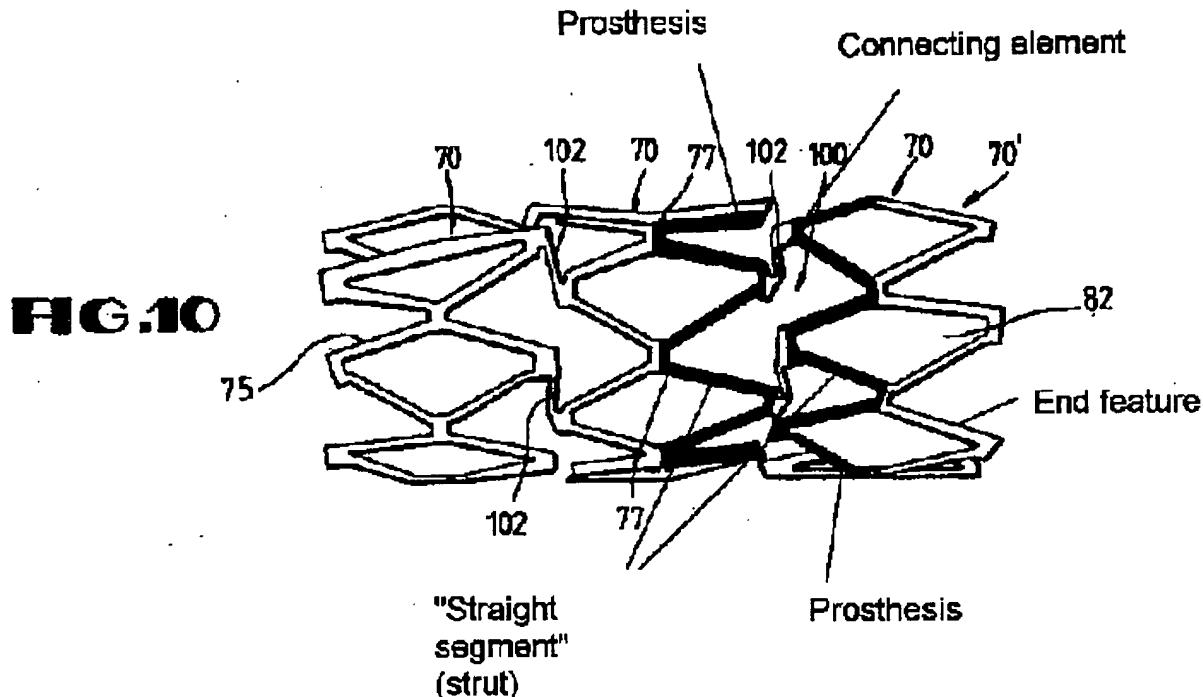
If the above depiction of Palmaz is the interpretation intended by the Examiner's comments, it too fails to provide a structure that anticipates the instant claims. Claim 36 describes, in part, a stent comprising a plurality of adjacent undulating circumferential bands, each of the undulating circumferential bands *consist* of a plurality of interconnected struts. Each strut has a first end and a second end. Adjacent struts are connected together *at only one end* of the struts. The stent also comprises a plurality of connecting elements, wherein each connecting element joins end portions of adjacent undulating circumferential bands. Each connecting element extends from *only a single location* on each of the adjacent undulating circumferential bands.

While the highlighted configuration shown does provide for bands which appear to consist of struts, wherein adjacent struts are connected at only one end of the struts, the

connecting elements do NOT extend from *only a single location* on each of the adjacent undulating circumferential bands. As is shown above, each connecting element will include a branched structure (the remains of the other ‘half’ of the prosthesis 70 not used to define the band) which joins one of the bands at *two* locations rather than *only a single location* as recited in the instant claim.

In the annotated figure above, it is clear that in order for the connecting member to extend between the adjacent bands the connecting member MUST pass through the branching structure which is extraneous to the Examiner’s reading. As is shown, such an extraneous feature results in a connection between the adjacent circumferential bands which is at more than “only a single location” in violation of the recitation of the instant claims.

In yet another possible interpretation of the Examiner’s comments, adjacent prosthesis ‘halves’ separated only by the connection elements are considered. In this case (as presented below in a third annotated copy of figure 10), distinct “end features” are present, which extend from each of the prosthesis. The end features structurally connect adjacent struts together so that each strut is connected to an adjacent strut at both ends, rather than “at only a single end” as the instant claim recites.



As demonstrated above, the Office Action lacks clarity. Regardless however, of which of the above interpretation was intended by the Examiner, the Palmaz reference does not teach or suggest all of the elements of instant claim 36, and thus also fails to anticipate those claims which depend therefrom. As a result, Applicants respectfully request that the rejection to claims 36, 39, 41 and 43 be withdrawn and the claims allowed.

Further regarding dependent claim 40, the Office Action stated that "although the stent of Palmaz is not disclosed as self-expanding, the construction and arrangement of the stent is such that a self-expanding material **could** be used to make this stent." (emphasis added)

In response, Applicants note that it is recognized that "[A] a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference (*Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). The Examiner correctly points out that Palmaz does not

disclose a self-expanding stent. While the Examiner is entitled to his opinion as to what the stent of Palmaz could be constructed from, in order for Palmaz to anticipate the instant claim, the Palmaz reference must expressly or inherently describe all of the features claimed. Nowhere does Palmaz expressly or inherently describe constructing the stent of a self-expanding material as the instant claim describes. Moreover, Palmaz specifically recites that the tubular member (stent) is not a “self-expanding member”. This provides an additional ground for patentability of claim 40. The rejection is respectfully traversed.

Further regarding dependent claim 42, the Examiner asserts that “the stent of Palmaz is a shape memory material or alloy because it keeps the shape given to it by the balloon”.

The term “shape memory” is widely used in the art and one of ordinary skill in the art will recognize that devices constructed of shape memory materials or alloys are provided with the unique capability of “remembering” a pre-programmed shape, which the device can achieve or return to upon exposure to a variety of conditions. There is no teaching in Palmaz that the stent of Palmaz is constructed from a shape memory material or alloy, and there is no teaching of a pre-programmed state. No one of ordinary skill in the art would consider the stent of Palmaz to be constructed of a shape memory material or alloy merely because it is capable of keeping a shape given to it by a balloon. Because Palmaz fails to teach a stent constructed of a shape memory material or alloy, the rejection is respectfully traversed.

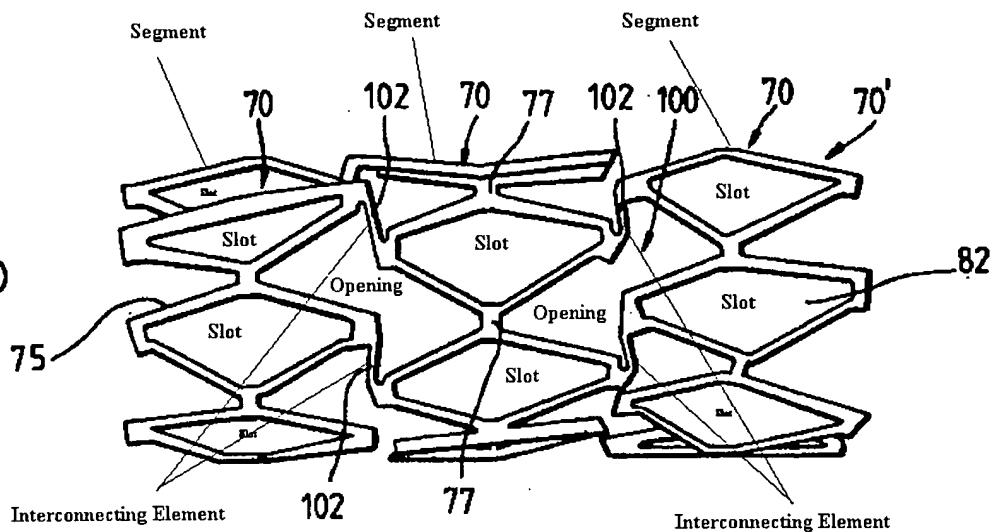
**Regarding claim 84 and those claims depending therefrom**

Before discussing the rejections to the instant claims, Applicants acknowledge the objection in the Office Action to claim 84 in regard to the use of the term “cylindrical” as opposed to “cylindrically” in the instant claim. Applicants assert that the claim is fully understandable by one of ordinary skill, and as such amendment of the claim should not be necessary or affect the ability of the Applicants to appeal the instant claims. If it is deemed necessary by the Board, Applicants will readily amend the claim as they see fit.

Turning now to the rejection, in the Office Action, the Examiner also rejected claim 84 and dependent claims 79 and 83 under §102(a) as being anticipated by Palmaz for the same reasons discussed above in regard to claims 36 and 39-43. The arguments presented above apply equally here as well and should be viewed as being applied to claims 84, 79 and 83 where appropriate.

The Examiner also noted that with regard to claim 84, “Palmaz has slots (82) and openings (the other holes of the stent) such that the claim language is read upon by Palmaz’s structure.” In claim 84, the limitation most relevant to the Examiner’s rejection states that the stent has a sidewall with a plurality of openings therethrough, “wherein each of the openings in the sidewall is bounded by two interconnecting elements and portions of two different adjacent cylindrical shaped segments.” As illustrated below in yet another version of FIG. 10 of Palmaz, it clear that only *some*, rather than *each* of the of the openings in the sidewall of the Palmaz stent are bounded by two interconnecting elements and portions of two different adjacent cylindrical shaped segments.

**FIG.10**



By asserting that the slots 82 of Palmaz are somehow, *not* openings, as “openings” are defined by the instant claims, the Examiner is improperly ignoring the recitation in the instant claims that *each* of the openings in the sidewall be bounded by two interconnecting elements and portions of two different adjacent cylindrical shaped segments.

An anticipation rejection under §102 requires that all of the features recited in the rejected claims be present in the single reference cited. The stated requirement of the instant claims that *each* of the openings in the sidewall of the stent is bounded by two interconnecting elements and portions of two different adjacent cylindrical shaped segments” (emphasis added) is simply not met by the Palmaz reference, which clearly shows a stent wherein only *some* of the openings may meet this requirement but wherein other openings certainly do not. The pretense that some of the openings which are clearly present in the sidewall of the Palmaz stent are “openings” as described by the instant claims, while others are somehow not openings but rather “slots” is an artifice created by the Examiner in an attempt to provide the stent of Palmaz with features which it simply does not have in an effort to force Palmaz into the confines of the

language of the instant claims for the purposes of establishing anticipation under §102. To pretend that the slots 82 of Palmaz are not openings, despite the obvious character and nature of such slots is both counter intuitive and violation of §102 rejection practice, and as such the rejection is believed to be respectfully traversed.

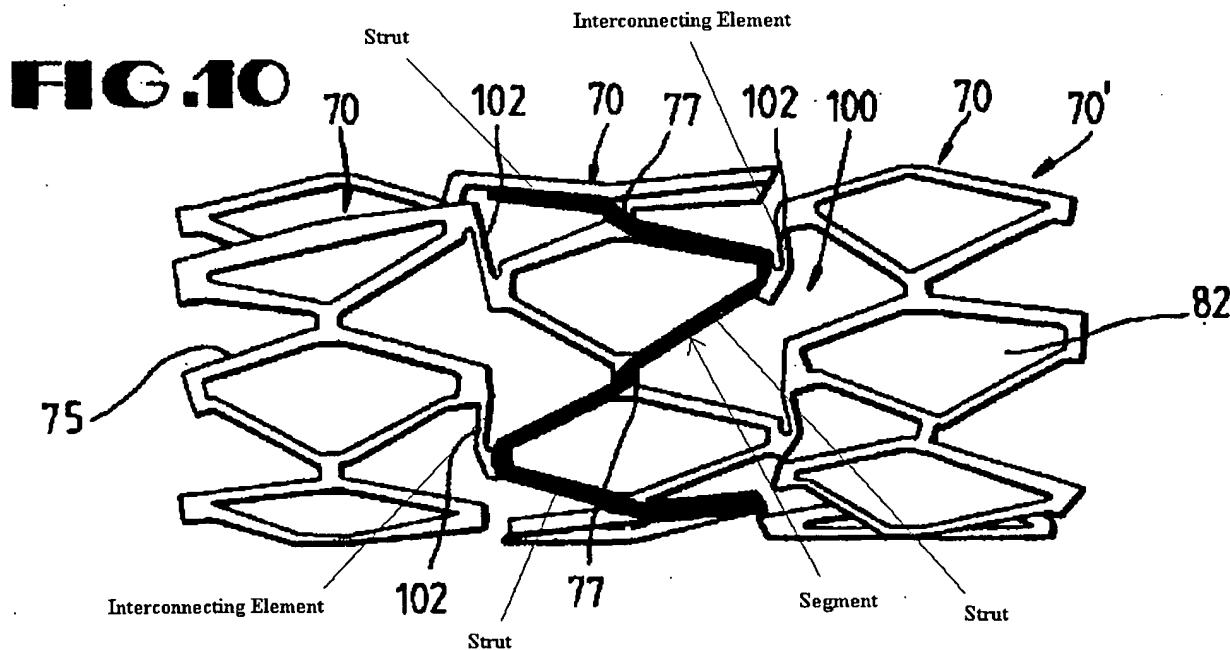
Further regarding claim 89, in the Office Action claim 89 was rejected under §102 by Palmaz in the general statement of the rejection but no reasoning specific to claim 89 was put forth.

Given the failure of the Office Action to clearly identify in Palmaz each element of the claim, Applicants are again, forced to unfairly speculate concerning how the rejection is applied. To that end, Applicants have included the following analyses, and annotated versions of FIG. 10 of Palmaz. Applicants recognize that it may be possible to come up with additional and/or different interpretations of the Palmaz stent other than those provided below. Absent any guidance from the Examiner in the latest Office Action, it would be folly to attempt to hypothesize all of the possible arguments that may or may not be what the Examiner intended. Thus, the following two analyses are a good faith effort on the part of the Applicants to surmise the Examiner's reasoning based on his past positions as set forth in the file history of the Application.

In regard to the specific recitation of claim 89, while it is noted that claim 89 shares some limitations with the other claims discussed thus far, the instant claim also has at least one feature which distinguishes the claim from those previously discussed. In part, claim 89 describes a stent which includes cylindrical shaped segments each of which are defined by a member formed in a closed undulating pattern of interconnected struts, wherein circumferentially

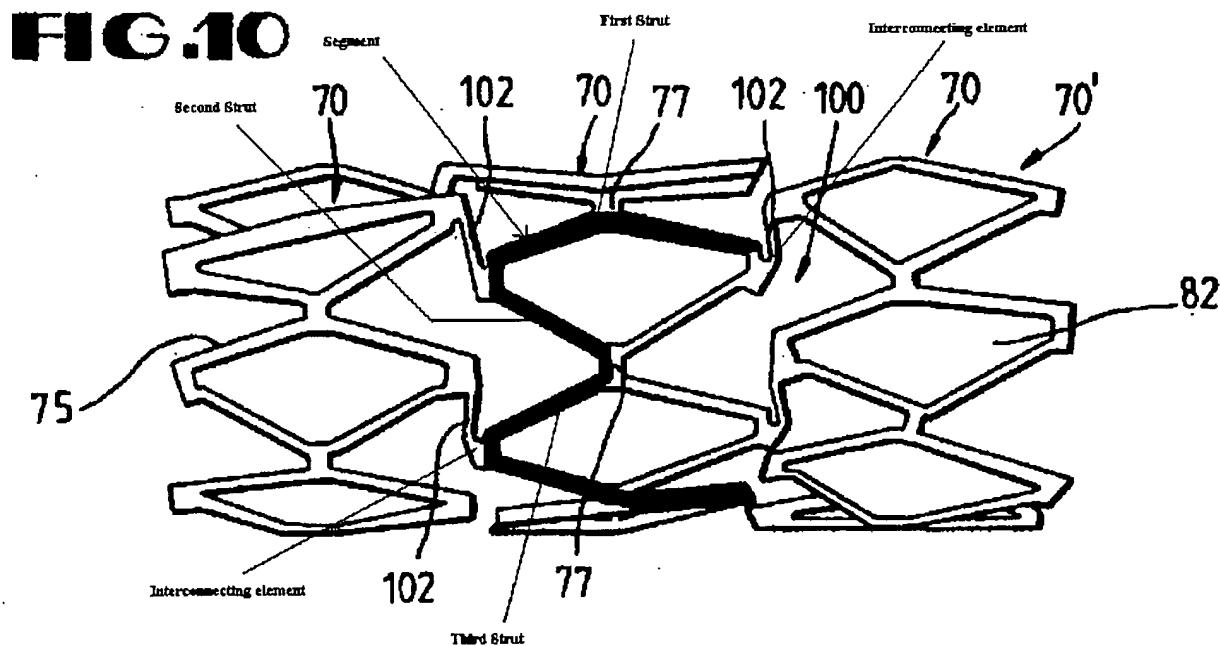
adjacent struts are interconnected at only one end of the struts at an interconnected end portion. Some segments have interconnecting elements extending from the distal end of the segment and from the proximal end of the segment. The interconnecting elements which extend from the distal end of the segment are connected to the interconnecting elements which extend from the proximal end of the segment via three struts of the segment.

Because of the very different nature of the structure of the Palmaz stent from that of the stent described in the instant claim, attempting to interpret Palmaz to have features which are even somewhat like the feature claimed requires a rather unorthodox view of the Palmaz structure. For example, in the following annotated version of FIG. 10 an attempt has been made to interpret Palmaz as having a closed member segment, wherein adjacent struts of the segment member are connected only at one end, wherein the segment has interconnecting elements extending from both ends of the segment.



As can be seen however, the interconnecting elements extending from the proximal end of the segment and the interconnecting elements extending from the distal end of the segment are *not* connected *via three struts* as the instant claim recites, but rather are connected by only a *single* strut. If the non-labeled elements immediately adjacent to the filled-in segment are considered as struts, then it is apparent that not only will the opposing interconnecting elements still fail to be connected *via three struts* but also such additional struts are connected at more locations than *at only one end* as recited.

Additional interpretations of the Palmaz stent are, of course, possible. For example, in the depiction of Palmaz' FIG. 10 which follows, the Palmaz stent is shown wherein one interconnecting element on one end of the segment (shown filled in) is connected via three 'struts' to another interconnecting element on the other end of the segment.



In this latest interpretation of Palmaz, the stent depicted still fails to anticipate all of the elements of the instant claims.

As shown above, while the filled in segment includes three ‘struts’ connecting the upper right interconnecting element and the lower left interconnecting element, the interconnecting element on the upper left of the drawing is clearly connected to the upper right interconnecting element by less than three struts in contrast to the recitation of the claim. In addition, the circumferentially adjacent struts of the segment depicted can only be considered as being connected at *only a single end* of the struts if the segment is viewed without the surrounding structure of the stent (those structures immediately adjacent to the filled in segment, but which are illustrated not filled in). When such extraneous features are considered at least some of the struts of the filled in segment are inherently provided with multiple connections via the extraneous structure.

Applicants have put forth the above analyses in a good faith effort to attempt to hypothesis the most likely reasoning for the rejection to claim 89. As the comments above indicate however, the rejection, even with the support provided is are respectfully traversed.

**Regarding claims 90 and those claims depending therefrom**

As with claim 89 above, there are no specific grounds of rejection set forth in the Office Action in support of the rejection to claim 90, and those claims which depend therefrom. Applicants assert that Palmaz does not teach all of the elements of claim 90 and those claims which depend therefrom. Given the lack of support in the Office Action for the specific rejection

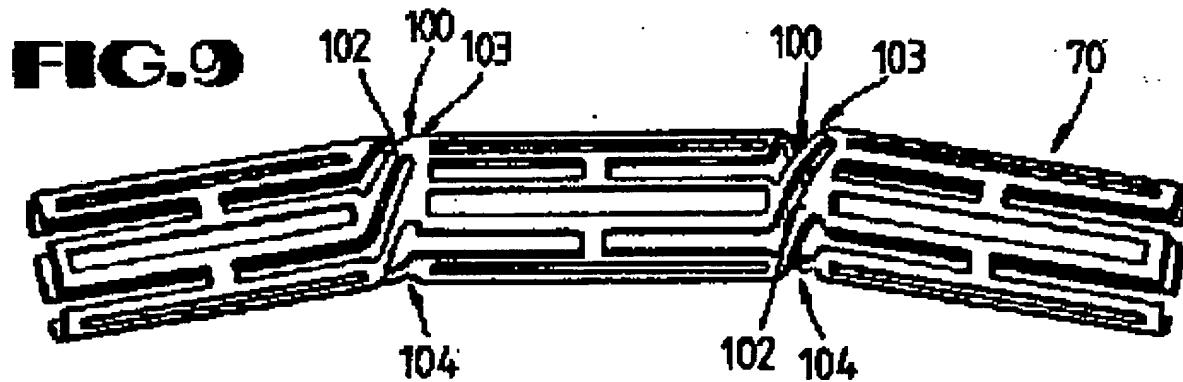
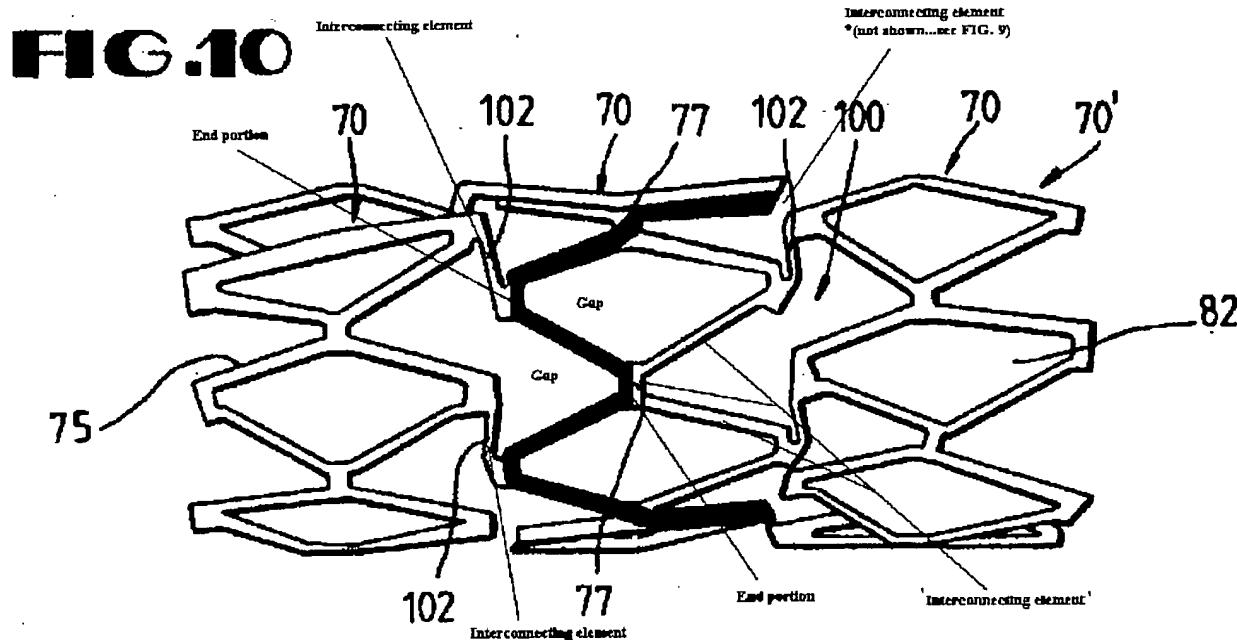
of claim 90, Applicants are again forced to hypothesize as to how the Examiner may be viewing the structure of the Palmaz stent in order to be responsive to the rejection.

Claim 90 describes in-part a stent comprised of a plurality of closed undulating segments that extend circumferentially about the stent. The ends of each undulating segment are characterized by a plurality of end portions separated by gaps, wherein the gaps on the first end are circumferentially offset from the gaps on the second end and the end portions on the first end are circumferentially offset from the end portions on the second end. Undulating segments are located at the first and second ends of the stent. The end segments each have a plurality of interconnecting elements extending from one end of the end segment only to an adjacent segment thereto. The plurality of undulating segments which are located between the segments at the first and second ends of the stent have interconnecting elements extending from less than all of the end portions at both ends of the segments.

In the interpretation of Palmaz (illustrated below by yet another annotated copy of FIG. 10) a closed undulating segment is depicted wherein the ends of the undulating segment are characterized by a plurality of end portions separated by gaps, wherein the gaps on the first end are circumferentially offset from the gaps on the second end and the end portions on the first end are circumferentially offset from the end portions on the second end.

It is clear however, that the undulating segment shown does *not* have interconnecting elements extending from *less than all of the end portions* at both ends of the segments as the instant claim recites, but rather all of the end portions of the segments have interconnecting elements extending therefrom. Note: FIGs. 7-10 of Palmaz illustrate different views of the **same** graft (see column 6, lines 1-9). FIGs. 7-9 depict the graft in a reduced state

FIG. 10 depicts the graft “expanded and deformed” (Id). Applicants have included a copy of FIG. 9 of Palmaz to show that while the lower-left most element 102 and upper-right most element 102 are missing from the depiction in FIG. 10 it is clear that the stent does in fact have such structures.



Even if one asserts however, that not all of the end portions of the segment shown directly contact a structure 102 (which Applicants, for the sake of argument, would consider for the present issue to be analogous to the interconnecting elements recited), the extraneous ‘struts’ adjacent to the segment nevertheless are present in the stent will act as ‘interconnecting elements’ and thus provide *all* of the end portions of the segment with interconnecting elements extending therefrom in violation of the recitation of the instant claims.

As stated previously, while Applicants recognize that other interpretations of the Palmaz stent may be imagined, Applicants cannot fathom any sort of selective construction of Palmaz which would include all of the elements of the instant claims. As a result, the rejection is respectfully traversed.

Further, regarding dependent claim 92, in addition to the reasons presented in section 6 above, and also for the same reasons expressed above in regard to claim 42, Applicants assert that Palmaz does not describe a stent that is constructed of a shape memory material or alloy. For at least this reason the rejection is respectfully overcome.

Further, regarding dependent claim 94, in addition to the reasons presented in section 6 above, and also for the same reasons expressed above in regard to claim 40, Applicants assert that Palmaz fails to teach that the stent described therein is self-expanding. For at least this reason the rejection is respectfully overcome.

In light of the above, Applicants assert that the Examiner erred in rejecting the instant claims under §102(b) as being anticipated by Palmaz.

**II        The Examiner erred in rejecting claims 36, 39-45, 67, 79, 84, and 89-96 under 35 U.S.C. §103(a) as being obvious over Lau in view of Palmaz.**

Applicants disagree with the assertion set forth by the Examiner that the proposed combination of Lau and Palmaz renders the instant claims obvious.

In the Office Action, the Examiner asserts that Lau meets the claim language where the undulating bands as claimed are elements (12) of Lau and the connecting elements as claimed are elements (13) of Lau, but that Lau fails to disclose the interconnector elements that are “circumferentially and longitudinally offset” as claimed. Palmaz is cited “to show that it had been known to make connectors for adjacent stent segments offset in this way”. The Office Action asserts that it would have been obvious to make the connectors of Lau offset circumferentially and with respect to the longitudinal axis for the same reasons that Palmaz did the same and so that better radial support for the vessel is provided in between stent segments than with a longitudinally aligned connector.

In response, Applicants assert that the motivation cited by the Examiner to combine Lau and Palmaz is not supported by the references as a whole and is instead based on the mere speculation of the Examiner. Moreover, Applicants assert that regardless of motivation or lack thereof, even if the references are combined in the manner proposed in the Office Action the resulting hybrid would not meet all of the requirements of the instant claims.

In describing the requirement of §103 that there be a motivation or suggestion to modify or combine references for the purposes of establishing an obviousness rejection under §103, MPEP 2143.01 states:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Lee*, 277 F.3d 1338, 1342-44, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002) (discussing the importance of relying on objective evidence and making specific factual findings with respect to the motivation to combine references); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the Office Action, the Examiner indicates that the requisite motivation to combine the references in the manner proposed will be "for the same reasons that Palmaz did the same". The implication of this statement is that the problem to be solved is based on Lau and the solution is derived from Palmaz. As discussed below, it is clear that the connector members of Palmaz will do nothing to solve any "problem" associated with the stent of Lau.

Lau describes a stent which is flexible along its longitudinal axis but which is stiff and stable radially in an expanded condition (column 1, line 50-55). To this end, the Lau stent is provided with a "plurality of radially expandable cylindrical elements which are relatively independent in their ability to expand and to flex relative to one another" (column 2, lines 15-18). Interconnecting elements extend between adjacent cylindrical elements to "provide

increased stability and are preferably positioned to prevent warping of the stent upon the expansion thereof" (column 2, lines 21-25). Thus, in accordance with the disclosure of Lau, the generally circumferentially undulating elements are designed to provide the stent with independently flexible, cylindrical segments while the stability of the stent is increased by the generally straight, longitudinally oriented interconnecting elements which are shown extending between the segments (see also column 3, lines 28-43).

In Palmaz, the stent is provided with a configuration of tubular members or prostheses which define a closed cell or slot, wherein at least one connector member flexibly connects adjacent members (column 3, line 56 to column 4, line 7). As shown in FIG. 9 of Palmaz flexibility is imparted to the stent by the connector members 100 whereas the prostheses 70 are a more rigid structure as evidenced by the un-flexed and/or un-deformed structure of the prostheses 70 in both the flexed and un-flexed state (column 12, lines 41-63; see also FIGs. 7 and 9).

Whereas Lau provides a stent having undulating circumferential elements (12) which provide flexibility and straight longitudinal connectors (13) therebetween which are configured to improve stability, the stent of Palmaz is configured with somewhat opposing features wherein the prostheses (70) are clearly fairly rigid or inflexible structures with flexibility provided therebetween by the angled or spiral connectors (100 and 102).

In light of the above, Applicants presume that the problem to be solved by the Examiner's proposed combination is a perceived lack of flexibility between the cylindrical elements of Lau and that the Examiner seeks to provide the stent of Lau with the connectors of Palmaz to improve the flexibility of the Lau stent.

In response, Applicants assert that one of ordinary skill in the art would not perceive a problematic lack of flexibility between the cylindrical elements of the Lau stent, even in light of the Palmaz reference. The flexible nature of the Lau cylindrical elements is clearly described. The cylindrical elements are stated to provide flexibility along the longitudinal axis of the stent (column 1, lines 50-55; and column 2, lines 15-18).

In addition to the above, it must be noted that providing connectors which presumably will increase flexibility, such as the angled and/or spiraled connectors of Palmaz, would seem to be contrary to the desired characteristics of the Lau stent. As described in Lau, the configuration and placement of the connectors are necessary for stability between the cylindrical elements (column 2, lines 21-25). In addition, Lau describes that the interconnecting elements are preferably provided in a manner so that there is no shortening of the stent upon expansion (column 3, lines 28-32). It is unclear how an angled or spiral connector, such as is described in Palmaz would provide improved flexibility to Lau without impairing the desired stability and shortening characteristics described in Lau. It is recognized that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there can be no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). There can therefore, be no motivation to substitute the connectors 100 of Palmaz with those of Lau for the purpose of improving flexibility between the cylindrical elements of Lau given the stated need for the Lau connectors to provide increased stability.

In addition to the above, the Examiner also asserts that there is motivation to combine the references “so that better radial support for the vessel is provided in between stent segments then with a longitudinally aligned connector.”

There is nothing in the cited art as a whole which teaches or suggests that the connectors of Palmaz provide “better radial support” than the connectors of Lau. Rather the disclosures of Palmaz and Lau imply the opposite view. As indicated above, Palmaz repeatedly extols the flexibility of the connector members relative to the prostheses that they connect. Nowhere does Palmaz indicate that the connector members provide better radial support than other types of connectors. In Lau the longitudinal oriented interconnecting elements shown therein are said to provide increased stability and prevent warping of the stent, and provide spacing between adjacent cylindrical elements so that the elements “are spaced longitudinally close enough so that small dissections in the wall of the body lumen may be pressed back into position against the luminal wall, but not so close as to compromise longitudinal flexibility of the stent” (column 2, lines 21-30). The fact that the longitudinal connectors of Lau are acknowledged to provide this form of radial support whereas Palmaz is silent in this regard, more reasonably conveys to one of ordinary skill in the art that the connectors of Lau provide “better radial support,” than those of Palmaz.

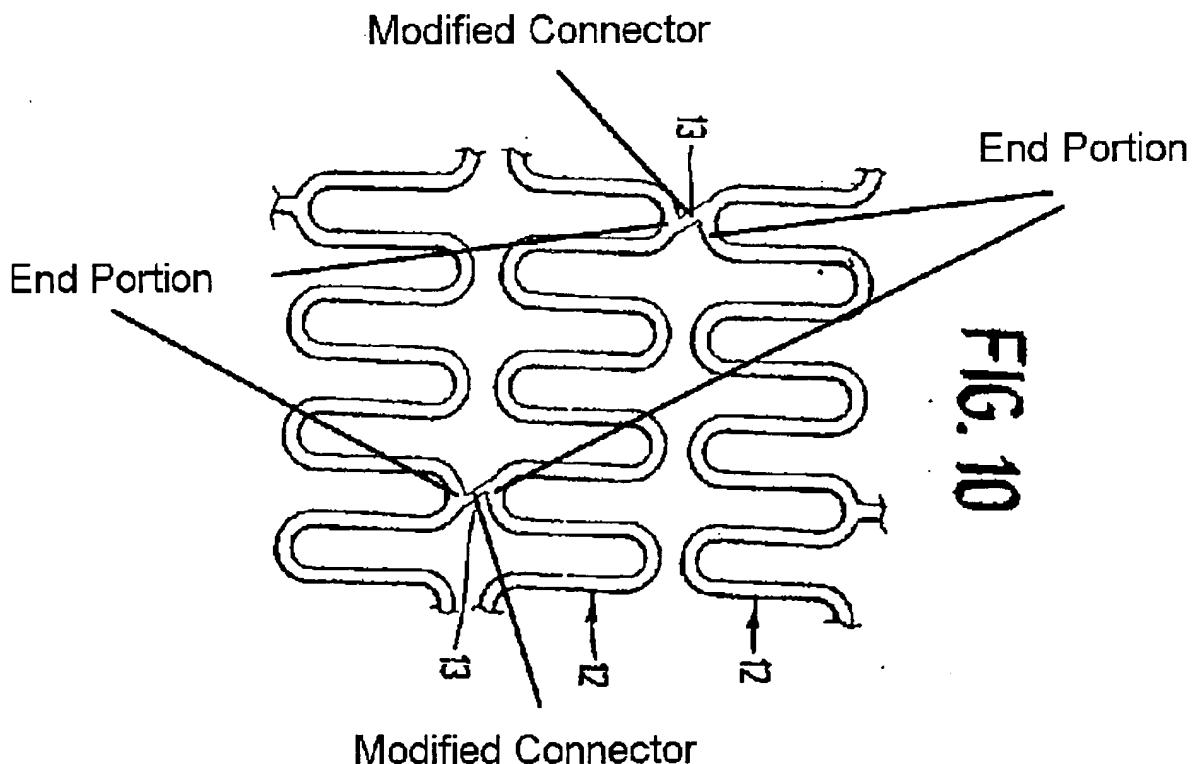
Because the connectors of Lau already address the asserted problem of “better radial support” there can be no motivation to replace such connectors with the ‘lesser’ connectors of Palmaz.

While the above arguments illustrate that there is no motivation to combine the references, it is also noted that even if the references were combined in the manner proposed in

the Office Action, the resulting hybrid device would not meet the language of the instant claims.

For example, **in regard to claim 36 and those claims which depend therefrom**, the Examiner's proposed modification to make the connectors of Lau "offset circumferentially and with respect to the longitudinal axis" will not result in a stent having all of the features of the instant claims.

If the interconnecting elements shown in FIG. 10, for example, of Lau are modified in the manner proposed, the modified angled and/or spiraled connectors will extend between longitudinally opposite end portions of the adjacent bands. In the illustration below Applicants have attempted to provide a depiction of the Lau stent with the modified connectors proposed by the Examiner.



Independent claim 36 however, recites in part that the “the end portions of the adjacent undulating circumferential bands which are joined to one another *are not* longitudinally opposite one another” (emphasis added see also FIG. 3). As can be seen from the above depiction of the hybrid stent, the hybrid stent includes joined end portions which *are* clearly longitudinally opposite one another in contrast to the recitation of the instant claims.

In another example, **independent claim 89**, recites, in part, that each interconnecting element extends from one interconnected end portion of one segment to another interconnected end portion of another adjacent segment but not to an oppositely positioned end portion of an adjacent segment. As shown above, the hybrid stent proposed by the Examiner fails to meet the language of this limitation.

Thus, for one or more of the reasons discussed above, claims 36, 39-45, 67, 79, 84, and 89-96 are patentable over the proposed combination of Lau and Palmaz

**3. The Examiner erred in rejecting claims 37, 38 and 80 under 35 U.S.C. §103(a) as being obvious over to Lau and Palmaz, as applied to claims 36, 39-45, 67, 79, 84, and 89-96, and further in view of Lam.**

As indicated above, there is no motivation to combine Lau and Palmaz in the manner proposed in the Office Action. The proposed addition of the longer struts of Lam does nothing to address the absence of motivation to combine Lau and Palmaz. As there is no motivation to combine Lau and Palmaz, one of ordinary skill in the art would have no further motivation to attempt the additional combination of Lam to the failed combination of Lau and Palmaz.

Furthermore, as indicated above, **in regard to at least claim 37 and 38, which depend from claim 36**, the proposed combination of Palmaz to Lau will not render the instant claims obvious regardless of motivation. The proposed addition of the longer struts of Lam to the proposed hybrid of Lam and Lau does nothing to address the failure of Lau and Palmaz alone to suggest all of the elements of the instant claims.

Thus, in light of the above, claims 37, 38 and 80 are patentable over the cited references.

### **CONCLUSION**

For at least the reasons discussed above claims 36-45, 67, 79, 80, 83, 84 and 89-96 are patentably distinct over the cited art. Consequently, reversal of the rejections is respectfully requested.

Respectfully submitted,

VIDAS, ARRETT & STEINKRAUS, P.A.

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11/23/04

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**(viii) Claims Appendix**

Claim 36. A stent comprising:

a plurality of adjacent undulating circumferential bands, each of the undulating circumferential bands consisting of a plurality of interconnected struts, each strut having a first end and a second end, adjacent struts connected together at only one end of the struts, at the first end each strut connected only to one adjacent strut and at the second end each strut connected only to one adjacent strut, each of the undulating circumferential bands having a proximal end region and a distal end region, the proximal end region and the distal end region each having a plurality of end portions where adjacent struts are interconnected; and

a plurality of connecting elements, each connecting element joining end portions of adjacent undulating circumferential bands, each connecting element extending from only a single location on each of the adjacent undulating circumferential bands, wherein the end portions of the adjacent undulating circumferential bands which are joined to one another are not longitudinally opposite one another, some of the undulating bands having connecting elements extending from the proximal end region and the distal end region.

Claim 37. The stent of claim 36 wherein the interconnected struts having a length, the length of the struts of the undulating circumferential bands at each end of the stent being different than the length of the struts of the undulating circumferential bands positioned therebetween.

Claim 38. The stent of claim 36 wherein the struts of at least one circumferential band are longer than the struts of an adjacent undulating circumferential band.

Claim 39. The stent of claim 36 wherein the stent is expandable from an unexpanded state to an expanded state and each undulating circumferential band comprises a pattern of

interconnected struts, in the unexpanded state at least a portion of the interconnected struts being parallel to one another.

Claim 40. The stent of claim 36 constructed and arranged to be self-expanding.

Claim 41. The stent of claim 36 constructed and arranged to be balloon expandable.

Claim 42. The stent of claim 36 wherein the stent is constructed from a shape memory material.

Claim 43. The stent of claim 36 wherein the end portions of adjacent undulating circumferential bands are not longitudinally opposite one another.

Claim 44. The stent of claim 43 wherein the interconnected struts having a length, the length of the struts of the undulating circumferential bands at each end of the stent being different than the length of the struts of the undulating circumferential bands positioned therebetween.

Claim 45. The stent of claim 43 wherein the struts of at least one circumferential band are longer than the struts of an adjacent undulating circumferential band.

Claim 67. A substantially cylindrically shaped stent having a longitudinal axis, the stent comprising a plurality of closed undulating segments, the undulating segments extending circumferentially about the stent, each undulating segment having a first end and a second end, the first end characterized by a plurality of end portions separated by gaps, the second end characterized by a plurality of end portions separated by gaps, the gaps on the first end circumferentially offset from the gaps on the second end and the end portions on the first end circumferentially offset from the end portions on the second end,

one of the undulating segments located at a first end of the stent having a plurality of interconnecting elements extending from one end of the segment only to a segment adjacent thereto and one of the undulating segments located at a second end of the stent having a plurality of interconnecting elements extending from one end of the undulating segment only to an undulating segment adjacent thereto,

there being a plurality of intermediate undulating segments which are located between the segments at the first and second ends of the stent, each intermediate undulating segment having interconnecting elements extending from the first and second ends of the intermediate undulating segments, the interconnecting elements extending from less than all of the end portions at both ends of the intermediate undulating segments,

each interconnecting element extending from an end portion of an undulating segment to an end portion of an undulating segment adjacent thereto,

each interconnecting element having a proximal end and a distal end, the distal end being offset in both a circumferential direction and a longitudinal direction from the proximal end.

Claim 79. The stent of claim 84 wherein each interconnecting element is substantially straight.

Claim 80. The stent of claim 84 wherein the stent further includes end segments and intermediate segments and the end segments of the stent include longer struts than the intermediate segments of the stent.

Claim 83. The stent of claim 84 comprising interconnecting elements which are circumferentially adjacent one another and are separated from one another by six struts on each of the cylindrical shaped segments from which they extend.

Claim 84. A tubular, flexible, expandable stent having a proximal end and a distal end and a sidewall with a plurality of openings therethrough, the stent comprising:

a plurality of cylindrical shaped segments aligned on a common longitudinal axis to define a generally tubular stent body, each segment being defined by an undulating pattern of interconnected struts to define the periphery of the stent body, circumferentially adjacent struts interconnected at only one end of the struts; and

a plurality of interconnecting elements, each interconnecting element extending from an interconnected end of circumferentially adjacent struts on one segment to an interconnected end of circumferentially adjacent struts on an adjacent segment, each interconnecting element having a proximal end and a distal end, the distal end circumferentially and longitudinally offset from the proximal end;

the stent including cylindrical shaped segments having at least three struts extending between each interconnecting element extending distally from the cylindrical shaped segment and the nearest interconnecting element extending proximally from the cylindrical shaped segment, wherein each of the openings in the sidewall is bounded by two interconnecting elements and portions of two different adjacent cylindrical shaped segments.

Claim 89. A tubular, flexible, expandable stent, comprising:

a plurality of cylindrical shaped segments aligned on a common longitudinal axis, each segment having a proximal end and a distal end and being defined by a member formed in a

closed undulating pattern of interconnected struts, circumferentially adjacent struts interconnected at only one end of the struts at an interconnected end portion and a plurality of interconnecting elements each extending from one segment to an adjacent segment, some of the segments having interconnecting elements extending from the distal end of the segment and from the proximal end of the segment, the interconnecting elements which extend from the distal end of the segment connected to the interconnecting elements which extend from the proximal end of the segment via three struts of the segment, each interconnecting element extending from one interconnected end portion of one segment to another interconnected end portion of another adjacent segment but not to an oppositely positioned end portion of an adjacent segment.

Claim 90. A substantially cylindrically shaped stent having a longitudinal axis, the stent comprising a plurality of closed undulating segments, the undulating segments extending circumferentially about the stent, each undulating segment having a first end and a second end, the first end characterized by a plurality of end portions separated by gaps, the second end characterized by a plurality of end portions separated by gaps, the gaps on the first end circumferentially offset from the gaps on the second end and the end portions on the first end circumferentially offset from the end portions on the second end, an undulating segment at a first end of the stent having a plurality of interconnecting elements extending from one end of the segment only to a segment adjacent thereto and an undulating segment at a second end of the stent having a plurality of

interconnecting elements extending from one end of the undulating segment only to an undulating segment adjacent thereto,

a plurality of undulating segments which are located between the segments at the first and second ends of the stent having interconnecting elements extending from less than all of the end portions at both ends of the segments,

each interconnecting element having a proximal end extending from an end portion of one undulating segment and a distal end extending from an end portion of an undulating segment adjacent to said one undulating segment,

each interconnecting element having a proximal end and a distal end, the distal end circumferentially and longitudinally offset from the proximal end, the interconnecting elements oriented diagonally to the longitudinal axis of the stent.

Claim 91. The stent of claim 90 wherein the stent is made of metal.

Claim 92. The stent of claim 91 wherein the metal is a shape memory alloy.

Claim 93. The stent of claim 90 wherein the stent forms a thin-walled tubular member.

Claim 94. The stent of claim 90 formed as a self-expanding configuration.

Claim 95. The stent of claim 90 formed as a mechanically expandable configuration.

Claim 96. The stent of claim 90 wherein the interconnecting elements between adjacent segments are of the same length.

**(ix) Evidence Appendix**

N/A

**(x) Related Proceedings Appendix**

A copy of the decision to the Appeal cited above is included on the following pages.

163-137468

The opinion in support of the decision being entered today was not written  
for publication and is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte BRIAN J. BROWN and MICHAEL L. DAVIS

MAILED

Appeal No. 1998-0022  
Application No. 08/511,076

SEP 25 2001

PAT. & T.M. OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

ON BRIEF

Before CALVERT, ABRAMS, and BAHR, Administrative Patent Judges.  
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-10,  
which are all of the claims pending in this application.

We AFFIRM.

BACKGROUND

The appellants' invention relates to a stent for implantation within a body vessel. An understanding of the invention can be derived from a reading of exemplary claim 10, which appears in the appendix to the Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Palmaz	5,102,417	Apr. 7, 1992
Lau et al. (Lau) (European Patent Application)	540,290	May 5, 1993

Claims 1-7, 9 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Lau.

Claims 1-7, 8, 9 and 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Lau in view of Palmaz.<sup>1</sup>

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the Answer (Paper No. 11) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 10) for the appellants' arguments thereagainst.

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<sup>1</sup>In both the final rejection and the Answer, the rejection of claim 8 was separately recited as "Lau et al and Palmaz as applied to claims 1-7 and 9-10 above, and further in view of Lau et al (EP 0540290)." However, only one Lau reference has been listed by the examiner, and it is EP 0540290.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The Rejection Under Section 102

At the outset, we note with regard to the anticipation rejection that the appellants have chosen to group together claims 1-7, 9 and 10 (Brief, page 7). Therefore, these claims will stand or fall with representative claim 10. See 37 CFR 1.192(c)(7) and Section 1206 of the Manual of Patent Examining Procedure.

Anticipation under Section 102 is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. See In re Paulsen, 30 F.3d 1475, 1480-1481, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994) and In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990). Anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or recognition of inherent properties that may be possessed by the reference. See Verdegaal Brothers Inc. v. Union Oil Co. of California, 814 F.2d 628, 633, 2 USPQ2d 1051, 1054 (Fed. Cir. 1987). It does not require that the reference teach what the applicant is claiming, but only that the claim on appeal "read on" something disclosed in the reference, that is, all

limitations of the claim are found in the reference. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984).

It is the examiner's position that all of the subject matter recited in claim 10 is disclosed or taught by Lau. The only argument offered by the appellants in rebuttal to this conclusion is that their claims require that the angular interconnecting elements which connect together adjacent segments of the stent "are not parallel to the longitudinal axis of the stent," a condition which they urge is not met by the embodiment shown in Figure 11 of Lau, in which the interconnecting elements are parallel to the longitudinal axis of the stent (Brief, pages 7 and 8).

Claim 10 recites a plurality of cylindrical shaped segments aligned on a common longitudinal axis to define a generally tubular stent body with

each segment being defined by a member formed in an undulating pattern of interconnected paired struts . . . in which adjacent pairs of struts in a given segment are interconnected at only one end in an alternating arrangement, the interconnected ends of each pair in each segment alternating between ends of pairs and the interconnected ends of the strut pairs of one segment being positioned substantially opposite to the interconnected ends of an adjacent segment (emphasis added).

The claim goes on to recite "a plurality of interconnecting elements each extending angularly from one segment to an adjacent segment" (emphasis added). From our perspective, since each segment is defined in claim 10 as a member including a portion which interconnects the ends of adjacent struts, an interconnecting element that

angularly extends from "a segment" to "an adjacent segment" meets the literal language of the claim if it extends at an angle from any portion of the first segment. Our position is best explained by relating this to the embodiment shown in Figure 11 of Lau. It is our view that Lau's elements 13, which interconnect adjacent segments of the stent, are "extending angularly from one segment to an adjacent segment" (emphasis added), as recited in the claim, in that they are at an angle (90 degrees) to the U-shaped portions of each segment that connects the ends of adjacent struts. It is true that elements 13 are oriented parallel to the longitudinal axis of the Lau stent, however, the fact is that claim 10 is devoid of language which would limit "angularly" to mean that the angle is measured with respect to the longitudinal axis of the stent, or would require it to be so interpreted.

It therefore is our conclusion that all of the language in representative claim 10 reads on the stent disclosed in Lau's Figure 11, and thus the reference anticipates the claim. We are not persuaded otherwise by the appellants' argument, which simply is not commensurate with the scope of the language in the representative claim.

The rejection of representative claim 10 and claims 1-7 and 9, which have been grouped therewith, as being anticipated by Lau is sustained.

The Rejections Under Section 103

Claims 1-7, 9 and 10 also stand rejected as being unpatentable over Lau in view of Palmaz. Again, the appellants have chosen to group these claims together and, as

before, we have selected claim 10 to be the representative claim. As far as this rejection is concerned, we determined above that claim 10 is anticipated by Lau and, since anticipation is the epitome of obviousness,<sup>2</sup> we also will sustain the Section 103 rejection of claims 1-7, 9 and 10.

The same reasoning applies to claim 8, the separate patentability of which was not argued in the Brief (page 11), and we also will sustain the Section 103 rejection of this claim.

CONCLUSION

All of the rejections are sustained.

The decision of the examiner is affirmed.

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<sup>2</sup>In re Fracalossi, 681 F.2d 792, 215 USPQ 569 (CCPA 1982).



Appeal No. 1998-0022  
Application No. 08/511,076

Page 8

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